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| **Stage 1 Desired Results** | | |
| CCSS-Mathematics Standards  5.OA.1  5.OA.2  5.NBT.2  5.NBT.5  5.NBT.6 | ***Transfer*** | |
| *Students will be able to independently use their learning to…*  Manipulate numbers and assess the reasonableness of answers in real-world problems. | |
| ***Meaning*** | |
| UNDERSTANDINGS  *Students will understand that…*   * The placement of mathematical symbols determines how an expression should be evaluated. * Our number system is based on a well-defined structure of units of 10 from decimals to whole numbers. * There are multiple processes for finding products and quotients. * Solutions should be analyzed for reasonableness. | ESSENTIAL QUESTIONS   * How are our number system and its symbols relevant to your everyday life?   TOPICAL QUESTIONS   * What strategies best aid in mastering multiplication and division of whole numbers? * Why is it important to follow the order of operations? * Why do mathematicians and scientists represent numbers in multiples of 10? |
| ***Acquisition*** | |
| *Students will know…*   * Where parentheses, brackets, and braces fit into the order of operations. * Patterns occur while multiplying and dividing by 10. * There are several strategies and processes to multiply and divide multi-digit numbers. | *Students will be skilled at…*   * Evaluating expressions that include parentheses, brackets, and braces. * Tracing the logic behind using the base ten. * Computing multi-digit multiplication and division problems with fluency and accuracy. |
| **Stage 2 - Evidence** | | |
| **Evaluative Criteria** | **Assessment Evidence** | |
|  | PERFORMANCE TASK(S):   * Start of the Year Celebration – small group project * Math in the Real World tri-fold – independent/partner project * Target Number Dash – Game | |
|  | OTHER EVIDENCE:   * Oral and/or written response to the essential question. * Math Journal Entries * Informal class discussions * Quizzes [CFAs] * Class and Homework Assessments * Pre and Post Assessments | |
| **Stage 3 – Learning Plan** | | |
| 1. Students will complete the unit pre-assessment. 2. Introduce essential question. Have students turn and talk to discuss the structure and vocabulary of the question. 3. Order of Operations – Review order of operations with students using Problem of the Day [attached];   Students will discuss what is being asked and possible methods of solution [T-n-T]. Go over group solutions and discuss the different methods. *Optional:* Watch Brain Pop video on Order of Operations. Give groups cards with numbers and symbols. Allow time for the students to manipulate the cards to find the correct solution.   1. Move into the use of brackets and braces and their functions by presenting { [ ( 3 + 2 ) × ( 6 – 4 ) ] + 2 } × 4 to the students. Allow them to use their prior knowledge of parentheses to decide the function of these new symbols. [Google: *Order of Operations Showdown* for additional problems.] 2. Order of Operations Bingo *[Extension: Numerical Expression Clock]*  - NCTM Illuminations 3. Performance Task: Target Number Dash [Informal Observation to monitor understanding of concept. Observe students ability to manipulate numbers and symbols in order to create the target number.] 4. Introduce Math in the Real World Tri-Fold. [*Information attached to plan*] 5. Writing Expressions: Number Tricks to introduce concept – [ [www.georgiastandards.org](http://www.georgiastandards.org) - Grade 5, Unit 1, page 26 ] – This is the scaffolding activity to lead to Money For Chores – move the students from the number trick into writing the expression [example is given using a square for the number] 6. Money For Chores activity - [ [www.georgiastandards.org](http://www.georgiastandards.org) - Grade 5, Unit 1, page 26 ] 7. Writing Expressions Bingo – [ [www.georgiastandards.org](http://www.georgiastandards.org) - Grade 5, Unit 1, page 16 ] 8. Quiz to assess understanding of order of operations and writing expressions - CFA; Work day for Math in the Real World tri-fold 9. Re-teach as needed to ensure mastery of order of operations and expressions [Essential Question] 10. Bizz-Buzz-Bazooka – Quantiles [attached] – game to review multiples and simple multiplication facts 11. Which is Correct??? Students will evaluate a math problem that has been given 2 possible solutions. They must determine which answer is correct. Students will then turn and talk with math partners to explain their reasoning [Higher Learners: explanation should include where the mistake was made with the other solution]. Model for students how to turn their conversation into a written explanation of their method. 12. What’s Your Multiplication Strategy? [Probe 17 – attached]; review multiplication strategies and help students with misconceptions or misunderstandings 13. Play “You Be the Judge” – Math Strategies p.26-27 [Blackline Master I-53] 14. Funbrain.com – Multiplication Games [harder games have 2-digit by 3-digit] 15. Quiz to assess understanding of multiplication strategies - CFA 16. Performance Task: Complete part 2 of the Math in the Real World tri-fold 17. *The Doorbell Rang* by Pat Hutchins: review ideas of division with students; create a chart with students ideas of what division is; read the book and use manipulatives [pattern blocks or cookie cutouts] as needed for understanding; students should work with a partner or small group to create a short story that demonstrates at least 3 division problems; act out the story for the class 18. The Pet Store – *Quantiles [attached]* 19. What’s Your Division Strategy? – Probe 18: Pose the problem to students. Have them solve the problem on their own then complete the worksheet to identify their strategy 20. Review methods of division: long-division, drawing arrays, repeated subtraction, partial-quotient [based on your class’ preferred methods] 21. Division-Four-In-A-Row [ [www.georgiastandards.org](http://www.georgiastandards.org) - Grade 5, Unit 1, page 56 ] 22. Quiz to assess understanding of division strategies - CFA 23. Introduce Powers of 10 – use place value chart to discuss the addition of zeros as you move from one value to another; focus students understanding of the zero being placed in front of or behind the decimal point; connect with multiplication and division [numbers becoming larger or smaller] 24. Patterns R Us [ [www.georgiastandards.org](http://www.georgiastandards.org) - Grade 5, Unit 1, page 42 ] 25. Performance Task: Complete Part 3 of Math in the Real World tri-fold 26. Performance Task: Start of the Year Celebration [ [www.georgiastandards.org](http://www.georgiastandards.org) - Grade 5, Unit 1, page 66 ] – group activity; groups should present their solutions and reasoning 27. Review essential questions – have students discuss orally with teacher or small groups or write explanation/reasoning for the essential questions 28. Complete final assessment. | | |
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UbD Template 2.0